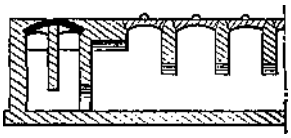
works, constructed according to the designs of Dalen. The gases are carried away near the top of these pits. For this reason, only a small portion of the top of the ingots is exposed to the hot gases.

In the pits the lower portion of the ingots was heated much less than their top. This made it necessary to obstruct the ends of the furnace by charging ingots against the walls (thick end down).

In order to improve the work of the furnace it was necessary to cut out the sloping portion of the bottom of the port, lowering it to the level of the hearth of the pit.

As the Siemens fired type of soaking pit is the most desirable furnace for the heating of ingots and is widely used, the principles governing its rational construction are given:



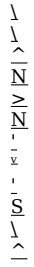


FIG. 114.

FIG. 115.

1. It is desirable that the heating chamber of these pits should be operated with a slightly negative pressure, in order that the operatives will not be burned when the covers are taken off;
2. The arches over the regenerators should be at the same level as the covers, so that the entire furnace can be covered with cast-iron plates forming a working platform;
3. It is more convenient to make the regenerators horizontal and construct them in such a manner that the gases enter at their top and pass out at their lowest portion to enter the flues leading to the reversing valves;
4. The port sills should be placed as close as possible to the level of the hearth of the pits. If this construction is employed